SCIENCE P.L.U.S

Performance-Based Learning and Understanding in Science

Grade: 9

Quarter: 3

TARGET: EARTH



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Performance-Based Learning and Understanding in Science

**Unit Overview**

**Grade:** 9

**Title:** Target: Earth

**Theme:** Form and Function

**Quarter:** Third

**Essential Questions:**

* What is a telescope?
* What is a star chart?
* What are some examples of Extraterrestrial objects?
* What factors (variables) might affect the movement of extraterrestrial objects?

**Unit Questions:**

* What are the two types of telescopes?
* What is the magnification of a telescope?
* What is needed to build a telescope?
* How do you read a star chart?
* What are the dangers ad implications of an Impact crater on Earth?
* What can be done to prepare for a “fatal impact”?

**Cross Curricular Connections:**

Reading, writing, speaking, and listening; Mathematics

**Brief Description:**

In this unit the student will conduct a number of investigations on star maps, telescopes, and impact craters. The first activity involves the team in ***building*** and finally ***exploring*** with a telescope. He/she then compares the telescope to a diagram contained in the Student Resource Handbook The second activity the student works with a partner to ***identify*** the parts of a star chart while ***constructing*** a star map. The third activity involves the team in using ***map reading*** skills while following a set of written directions. The fourth activity has the students ***examining*** asteroid impacts on Earth and finally ***making decisions*** in a creative way.

**Prior Knowledge/Skills Required for Unit:**

Students involved in this unit should have prior knowledge of the structure of the solar system and planetary motion. Basic skills in using algebraic equations is also required.

**Approximate Time required**

Three to four class sessions may be required.

TARGET: EARTH

STUDENT DATA AND ANSWER BOOKLET



Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TARGET: EARTH

**Engagement:**

The Apocalypse, Armageddon, Doomsday . . . the end of the world is upon us! You always knew this day would come! A few major cities around the world have already been destroyed. **What is causing this?** Asteroids hitting the Earth are destroying the world.

All the grown ups in your town have been destroyed, they were all conveniently gathered together at the town hall for a meeting when a giant asteroid slammed into the building exploding with the force of an atomic bomb. You alone, with your superior intellect, must take control and decide how to save us all. (Remember: if you help save the Earth you will become a national hero and get lots of $money$) **What can you do to save the Earth?** In the next couple days you must learn how to read a star map, build a telescope, identify some major asteroids, and come up with a good solution on how to stop the “big one” from hitting the Earth.

**Brainstorming:**

Write a short paragraph on what would happen if a large asteroid hit the earth? (Hint: be specific about what dangers would be caused by this type of impact.) Place this paragraph as a podcast on the following website: (make you own teacher site on podbean.com)

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Closure:

Now that you are an expert on asteroids and impacts. You need to make a multimedia presentation to convince NASA of the danger.

Include in you presentation:

1. What factors would cause an asteroid to start travelling towards the Earth.
2. Include what Danger the Earth would be in, depending on the size of the asteroid.
3. Include your well thought out **Solution** on how you would save Earth. You have at your disposal ***all*** of Earth’s supplies and weapons.